

REMARKS

The above preliminary amendment is made to remove multiple dependencies from claims 1-7, 9, 12-15 and 17-21.

A new abstract page is supplied to conform to that appearing on the publication page of the WIPO application, but the new Abstract is typed on a separate page as required by U.S. practice.

Applicants respectfully request that the preliminary amendment described herein be entered into the record prior to calculation of the filing fee and prior to examination and consideration of the above-identified application.

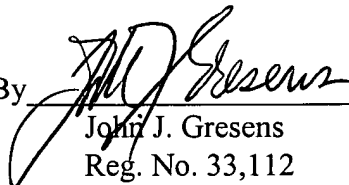
If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, John J. Gresens (Reg. No. 33,112), at 612.371.5265.

Respectfully submitted,

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By


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Marked-up Copy of Claims

1. [Procedure for combating microorganisms in a sugary, aqueous process medium, in particular of the sugar industry inserting hops acid as the active substance,]

"Procedure for control of the content of microorganisms in a sugary, aqueous process medium of extraction systems of the sugar industry using hops acid as the active substance,"

characterized by the fact that

[hops acid in an aqueous alkaline medium is added in solution to the process medium, whereby the pH value of the added solution is higher than the pH value of the process medium; the hops acid in the process medium passes over from the dissociated form into the non-dissociated form.]

"hops acid brought into solution in an aqueous alkaline medium is added to the process medium, whereby the pH value of the added solution is higher than the pH value of the process medium (and) the hops acid in the process medium passes over from the dissociated form into the dissociated form."

2. Procedure according to [one of the foregoing claims] "claim 1",

characterized by the fact that

addition of the solution to the process medium is done in discontinuous manner.

3. Procedure according to [Claim 1 or 2] "claim 1",

characterized by the fact that

the solution displays hops acid in a concentration of 2 – 40%, preferably 5-20%, preferably 10 – 15%.

4. Procedure according to [one of the foregoing claims] "claim 1",

characterized by the fact that

the solution added to the process medium displays a pH value of 7.0 – 13.0, preferably 7.5 – 12.0, preferably 9.5 – 11.0.

5. Procedure according to [one of the foregoing claims] "claim 1",

characterized by the fact that

being dealt with – at least predominantly – in the case of hops acid is β -acid.

6. Procedure according to [one of Claims 1 –4] "claim 1",

characterized by the fact that

being dealt with – at least predominantly – in the case of hops acid is α -acid and/or iso- α -acid.

7. Procedure according to [one of Claims 1-6] "claim 1",

characterized by the fact that

in the case of the hops acid being dealt with – at least predominantly – is isomerized hops acid and/or its derivatives, or in any event a mixture thereof.

9. Procedure according to [one of the foregoing claims] "claim 1",

characterized by the fact that

provided as an alkaline medium is an alkaline hydroxide, in particular potassium hydroxide or sodium hydroxide, or a mixture thereof.

12. Procedure according to [one of the foregoing claims] "claim 1",

characterized by the fact that

the hops acid is dissolved in the alkaline medium as salt.

13. Procedure according to [one of the foregoing claims] "claim 1",

characterized by the fact that

the solution is added to the process medium manually.

14. Procedure according to [one of the foregoing claims 1 – 12] "claim 1",

characterized by the fact that

the solution is added to the process medium over already available dosing systems.

15. Procedure for the production of a solution of hops acid for addition to a sugary, aqueous process medium, in particular of the sugar industry according to the procedure based on [the foregoing claims 1 – 14] "claim 1",

the following procedural steps comprising:

- a) preparation of an aqueous medium;
- b) heating;
- c) addition of hops acid, in particular melted hops acid, measuring the amount of hops acid such that the end concentration lies within a prescribed concentration range;

- d) addition of the alkaline medium for reaching a predetermined pH value;
- e) mixing the alkaline medium with the added-in hops acid;
- f) maintaining the mixture at an elevated temperature over a prescribed period of time;
- g) separating out the hops acid solution from the mixture or vice-versa, as well as
- h) cooling the hops acid solution.

17. Procedure according to [Claim 15 or 16] "claim 15",

characterized by the fact that

the mixture is held at a temperature in the range of 40 – 80° C, preferably 60 – 80° C, preferably 65 – 75° C.

18. Procedure according to the foregoing [claims 15 – 17] "claim 15",

characterized by the fact that

hops acid solution is cooled down to a temperature below 10° C, preferably to a temperature in a range from 2 – 7° C.

19. Procedure according to one of the foregoing [Claims 15 – 18] "claim 15",

characterized by the fact that

the separated out solution of hops acid displays a pH value in the range of 7.0 – 13.0, preferably 7.5 – 12.0, preferably 9.5 – 11.0.

20. Procedure according to [one of the foregoing claims 15 – 19] "claim 15",

characterized by the fact that

used as hops acids are β -acids, α -acids, iso- α -acids or a mixture thereof, or isomerized hops acids and/or their derivatives, in particular –at least predominantly – tetrahydro- α -acid (THAA) or hexahydro- β -acid (HHBA) or iso- α -acid (IAA), rho-iso- α -acid (RIAA), tetrahydro-iso- α -acid (THIAA) and/or hexahydro-iso- α -acid, or a mixture thereof.

21. Use of hops acids for combating microorganisms in a sugary, aqueous process medium, in particular of the sugar industry,

characterized by the fact that

hops acid brought into an alkaline solution is added to the process medium, whereby the pH value of the solution is higher than the pH value of the process medium, and the hops acid in the process medium passes over from the dissociated form into the non-dissociated form based on [one of the Claims 1 – 14] "claim 1".